

ITEMS OF INTEREST.

The Dental Independent.

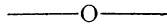
A MONTHLY RECORD OF
DENTAL LITERATURE.

EDITED BY
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PHILADELPHIA.
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ITEMS OF INTEREST.

VOL. VI.

PHILADELPHIA, JANUARY, 1884.

No. 1.

Shots from the Profession.

EXTRACTING FOR IRREGULARITIES.

DISCUSSION BEFORE THE N. Y. ODONTOLOGICAL SOCIETY.

Dr. Kingsley. What tooth, or teeth, shall we remove to correct irregularities? It seems to be the prevailing opinion among dentists that the canines should be saved at all hazards; and I think the opinion is sound and wise. Of course, there being exceptions to all rules, there may be rare cases where it would be otherwise. In a case where the canines stand entirely outside of the jaw, shall we attempt to expand the arch and bring these teeth into line, the laterals and bicuspid being almost in contact, or shall we sacrifice one of the teeth already in line, by taking out either the lateral incisor, the first bicuspid, the second bicuspid, or the sixth-year molar? There are four teeth to choose from; the question is coming up constantly—what shall we do? As nearly as a single statement can answer the question, I should say, if the articulation and the occlusion of the lower teeth with the upper was good, the bicuspid and molars of the lower jaw falling into the cusps of the under jaw as we would expect to find them, and the general masticating apparatus was in good condition, I should hesitate very, very much about removing the sixth-year molar to make room in the dental arch to force the canine into line. If the sixth-year molar was in bad condition, so that it would soon have to be removed anyhow, I might decide differently; but in that case it would not be removed because we wanted to force the canine into line, but because it was a bad tooth and had to go anyhow, and we only took advantage of circumstances. But, if the teeth were all sound, and the articulation and occlusion with the teeth of the lower jaw good, I should narrow the question down to the lateral incisor and the first bicuspid. In deciding between the lateral incisor and the first bicuspid, I should be governed partly by the position of the canine. If the canine was

standing right over the lateral, so that it would seem that the apex of the root was right over the lateral incisor, I should then say that it would be foolish to extract the first bicuspid in order to force the canine into place, for it would be almost a deformity when you had it there, if you did succeed in getting it there. In such a case I would not hesitate to extract the lateral incisor. A canine does not look much like a lateral incisor, I will admit,—it looks more like a bicuspid—but I have seen many a mouth, even in young ladies of excellent personal appearance, who have had the misfortune to lose, for some reason, the lateral incisors, and in which the canines were occupying their places. By cutting off the sharp point of the canines the arch is not disfigured by their presence, even in the case of a young lady, who has no hope of some covering to the upper lip. In the judgment to be used in extracting teeth for the purpose of correcting irregularity, a great many circumstances must be taken into consideration, all of which cannot be included in such a brief address as I am now attempting, nor, indeed, in any work written on the subject. It is an almost daily occurrence for me to receive plaster models accompanied by a request for my advice as to which teeth should be extracted; and those models will sometimes come to me in such shape that recently I have been disposed to say that if the natural teeth in the mouth looked like the teeth in the models I would extract every one of them; and if the articulation was as faulty as the articulation of these plaster models, I would pull them all out, or else I would not do anything. When models are sent for advice they should be good models, and even then they are of little use. It is only by seeing the faces of the individuals themselves that you ought to form a judgment. You have no right to form a judgment without seeing the patient and studying the face, for there are many circumstances necessary to the formation of a correct opinion, which cannot otherwise be considered. Therefore, I repeat again, that the advice that can be given in this form must necessarily be of a very general nature.

Dr. Dodge. In the case last spoken of, where the canines were almost or exactly in front of the laterals, why do you extract the laterals rather than the canines?

Dr. Kingsley. It is a pertinent question, and the answer is that the canines will be likely to remain in the jaw much longer, and will be more serviceable, more desirable, and better teeth than the laterals. That is the only reason.

Some little time ago a poor boy was sent to me by his mother. In his mouth the lateral and the bicuspid were in contact, and the canines stood above the laterals, fully developed, but not fully elongated, growing out in such a way on each side as to make the lip protrude. I told the boy to go where gas was given and have those canines extracted.

I think it was almost the first time in my life that I have directed such a thing to be done; but I knew that the boy was to be sent into the country where he would have the care of no dentist, nor anyone to take any interest in the matter, and so I thought the shortest and surest way out of the difficulty would be through the extraction of the canines, all the rest of his teeth being well articulated and in good position. I sent the boy, with my card, to one of the houses where they administer laughing-gas. He came back and reported that the dentist would not extract them, saying, "even if Dr. Kingsley says extract them, I will not do it." Half peevishly, I said, "if he knows more than I do about it, tell him to take out any one he chooses." He took out the first bicuspid on each side. That was three or four months ago. A few days ago I saw that boy, and the canines have dropped into line as beautifully as you ever saw.

Dr. Jarvie. How different are the views that Dr. Kingsley has presented this evening from those we were accustomed to hear a few years since. Fifteen years ago, any gentleman who should have stood in the New York Odontological Society and expressed such sentiments would have been convicted of heresy at once, and boycotted as soon as convicted. But I think Dr. Kingsley's ideas are correct, and in accordance with common sense. The idea that we must preserve all the teeth in the arch simply because they were placed there, is all nonsense. Dr. Kingsley instanced a case in which the cuspid was outside of the arch, the lateral incisor and the first bicuspid almost in contact, they and the second bicuspid and the first molar being all equally good, and the occlusion perfect, and he said that in such a case he would extract the first bicuspid. I would put it stronger: If the first molar was decayed, but was in a state to be put in good condition by treatment, no matter how badly decayed it might be, I should still extract the first bicuspid.

Dr. Kingsley. I accept that.

Dr. Jarvie. I think the cases would be exceedingly rare where I would extract a lateral incisor or a canine; I would extract the first bicuspid under almost all circumstances, only excepting some cases where the canine was unusually out of the arch, and the arch perfect without it, or where, for some special reason, there was no opportunity to use regulating appliances, as in the case of a poor person or one who would not be likely ever to see a dentist again. But I do not think of any case where I would want to extract a lateral for a lady. I think I should prefer to extract the first bicuspid and so preserve intact the six front teeth. There is much in this subject of the judicious and injudicious extraction of the teeth that has not been touched upon at all to-night. Dr. Kingsley has spoken upon extraction in cases of irregularity only. The subject might be extended to extraction in cases of decay and for the preservation of the rest of the teeth in the mouth.

Dr. Dwinelle. If I understood him correctly, Dr. Kingsley stated that the extraction of the temporary teeth never resulted in a contraction of the arch; is that correct?

Dr. Kingsley. Not quite. I said contraction of the jaw did not result; that the jaw bone will go on developing independently of the presence of the teeth. The jaw bone will develop independently of anything that may occur in the alveolar process and the teeth which the process contains, with the exception of the canines. The incisors may be removed for cause before the time for the eruption of the permanent teeth, and the temporary molars may be removed for cause before that time, without any great apprehension or fear that the arch will become crowded as the result of the removal of those teeth alone; it is when the canines are removed that you get a crowded state of the arch in almost all cases. I recollect none to the contrary. The removal of the temporary molars has never narrowed the space between the sixth-year molar and the canine so that the bicuspid could not come in. If the bicuspid has ever come out of place, I have no reason to believe that it was the result of any premature extraction of their temporary predecessors. I have seen bicuspid come out of the line of the arch, and in almost all cases I could trace it to the continued presence, rather than to the removal of the temporary molars. I have seen it in many cases, and I have questioned why it was that the bicuspid should be out of line, why it should not have taken its usual place, had the temporary molar been absorbed as usual. There is a nice point, which would open up a great deal of discussion. When I say I have seen the bicuspid out of line as a result of the temporary molar remaining there, I do not know that it was the result of it; I only know that it was out of line and the temporary molar was there. I do not know what was the real cause. But I do not believe that, except in some extreme cases, the removal or premature extraction of the temporary molars, one or both, will necessitate the narrowing or shrinking of the space between the canine and the first permanent molar, so that the bicuspid will not find their place.

Dr. Dwinelle. I suppose that the reason why the bicuspid are out of line is that the temporary teeth remain longer than they should normally. It often happens that the roots of the temporary tooth become dead, and we know that nature is exceedingly reluctant to absorb the roots of a dead tooth. They are not absorbed; they are thrown off generally by exfoliation. Another question: Whether Dr. Kingsley undertakes to say that the removal of the permanent teeth does not result in contraction of the arch?

Dr. Kingsley. In many instances it does, unquestionably.

Dr. Dwinelle. I have seen it in a case in the upper jaw where, in an effort to regulate the teeth, the two bicuspid and the sixth-year molars

on either side had been in succession removed, the arch contracting and the remaining teeth advancing continually until the twelfth-year molars impinged firmly upon the cuspids, so that the twelfth-year molars in the contracted circle, relatively occupied the place of the three teeth formerly in front of them. None of the lower teeth having been removed, one of the worst kind of cases of *protrusion of the lower jaw* was the consequence. The upper jaw had contracted down to less than the breadth of two fingers.

Dr. Rich. That is the result of the absorption of the alveolar process.

Dr. Kingsley. Certainly. We should probably find, if those cases were followed up, that in the end we should have complete absorption of the alveolar process, and the jaw would ultimately be just the same; if the teeth had remained in and been all removed at one time, the resultant jaw would be substantially the same in both cases. I cannot conceive that the lower jaw would have any different shape.

Dr. Rich. I do not see how the absorption of the alveolar process should change the immense mass of the jaw. It would be astonishing if it could,—the mass of the jaw is so great in comparison with the alveolar process—and certainly it is impossible for the shape of the jaw to be changed by the extraction of a tooth or two. The loss of the alveolar process will produce all those appearances, and, in fact, sometimes produces the most marked deformity. I have seen the whole side of the face sunk in from that cause; the alveolus was all gone, but the jaw was intact.

Dental laws have been passed in the following States. In our last issue we omitted Iowa and Mississippi: Alabama, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Michigan, Missouri, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Vermont and West Virginia.

Do not kill the pulp of a tooth because it is exposed. There are too many ways of preserving it alive and permanently filling the tooth to excuse its destruction. In your practice, why be behind the best dentists in the land? The facilities for improvement are now so abundant you may as well stand abreast of the most advanced.

The sale of liquor is now prohibited, in whole or in part, in seventy-one counties in Georgia, leaving less than half of the counties in which the sale is unrestricted. The last Legislature prohibited the sale in nine counties more, and provided for elections in thirty others.

CLEFT PALATE, HARE LIP, STAPHYLODAPHY.

UNDER THE CARE OF CHRISTOPHER HEATH, F.R.C.S., HOLME PROFESSOR
OF CLINICAL SURGERY, AND SURGEON TO THE
UNIVERSITY COLLEGE HOSPITAL.

[From British Journal of Dental Science.]

The following cases possess great interest alike from the point of view of practice and pathology:

E. J. T., a fair, well nourished girl aged four years, was admitted into University College Hospital early in October. On admission she was found to have a cleft extending through her hard and soft palates. The alveolar arch is well rounded and regular, the teeth are not deformed, displaced, or crowded. The palate arch is somewhat high. There is some hypertrophy of the faucial arches, but exact estimation is difficult in this case. The cleft sides of the soft palate move actively and end in clubbed extremities.

The voice is nasal and muffled, to the right of the mesial line of the upper lip is a linear cicatrix, the result of an operation undertaken during patient's infancy for the remedy of congenital hare lip.

The nostril on this side is drawn down and flattened, and the lip somewhat tied to the bone.

Family history unnoteworthy. General health is very good; a curious overgrowth of golden hair exists on both elbows, the skin in that location being quite shaggy.

On October 10th the patient was placed under the influence of chloroform, and Mr. Heath proceeded to close the aperture in the palate.

The edges of the soft palate were revived by paring.

The mucous membrane and periosteum were, by means of a raspator, raised and separated from the adjacent bone. The free edges were then freshened by paring. Introducing a pair of scissors curved on the flat, Mr. Heath divided the soft palate from the hard, making the cut as nearly transverse as possible. Three fine iron-wire sutures were passed, drawing together the muco-periosteal flaps, while the soft palate was united by two horse-hair stitches. The hemorrhage was trifling, and the tension on the stitches appeared far from excessive.

On October 18th, the middle suture was removed, the structures rapidly uniting.

On October 24th, Mr. Heath undertook a further operation, namely, one to remedy the disfigurement caused by the flattening of the right nostril, a result of the former hare lip operation.

The palate was seen to be intact, save for a minute aperture at junction of soft and hard palates, and the sutures were removed.

The operation consisting in cutting through the lip, and freely paring

away superfluous tissue. The two edges were then accurately adjusted and pins inserted. The whole of the cicatrix was removed.

The child has made a rapid convalescence, and shows a most marked improvement in her appearance.

Operating in cleft palate is a subject of great importance, the more so at the present time, when there are not wanting those, and notably in America, who deny the advantages claimed for staphyloraphy, as instrumental in aiding phonation, and actually go so far as to undertake a fresh operation, having for its object the restitution of the former cleft.

SENSATION AND PAIN, AND PAST EFFORTS TO CONTROL THEM.

BY LEVI C. LANE, M.D.

As the motor roots are under the control of curara and chloral, so we have a large list of medicinal agents which influence or control the posterior or sensory nerve roots; and these are known as narcotics, anodynes, and anæsthetics. The necessities of man have incited him to keen research in this domain, hence the list of remedies known which act thus is great in number.

Every physical pleasure of man falls under the head of sensation; and, as a paradox and seemingly incredible contradiction, all his physical woes lie within the same category; and hence in one circle the most antagonistic conditions exist. If some Mercator could project the great sphere of organic being, pleasure and pain would occupy each a half of the same sphere. To make the projection perfect, the hemispheres should so intersect as to have a tract of common territory—a species of neutral ground—where neither pleasure nor pain exists exclusively. In this neutral ground we find that most of our existence has been passed, if we confess to the truth of our individual experiences.

Some years ago, while visiting at the private residence of a wealthy gentleman of this city, I was much struck with the wondrous beauty of his place, and ventured the remark that amid such scenery and surroundings he must be a perfectly happy man. His reply showed that though a man of trade, his thoughts had passed beyond the range of mercantile matters, and that reflection and observation had led him to a due estimate of the limits of human felicity. He replied: "The conditions of human life are consistent with but few moments of happiness, and those are brief and only occur at long intervals." If mankind would adopt such a standard in their expectations of the future, and with Horace were to clip the wings of extravagant hope, there would be much curtailment in disappointment. Hope too often beckons on to silvery clouds which, when reached and grasped, are but empty, chilly vapor.

Human existence, however, is not even so fortunate as to have constant abode in the drowsy, neutral section mentioned ; its bark is often driven, or suddenly cast by accident or destiny, on the shore of pain. From the very couch where existence has its succession and continuation the cry of anguish never ceases to ascend ; every industrial enterprise which contributes to human comfort and ease of life through fabrics wrought by steam and machinery, often crushes the limb or mangles the hand of the artisan ; almost every surgical operation, as amputation, ligation of vessel, removal of stone, etc., is accompanied by a rude assault upon the sensory portion of the human body. To exorcise this demon Pain, in its forms so numerous indeed that

"To count them all would need a thousand tongues,
A throat of brass and adamantine lungs,"

did in the most remote eras of our race awaken effort and incite search for medicines which could give relief. And this was especially the case where surgery was called upon to intervene and make wounds in the human organism. For, to cure wounds, or to pluck from the diseased organism some useless member or offending agent, wounds must be made. To do this with the least pain to the sufferer, if we turn back the pages of medical history, we find many things suggested, some of which we will now proceed to mention :

Long prior to the dawn of English civilization, medicine as well as other sciences had made considerable progress in Egypt. In the Museum of Cairo, I saw a number of instruments obtained from the interior of the Pyramids which had evidently been employed in surgical operations ; one sees knives which evidently were used in cutting for stone ; also an instrument that might have been employed as forceps in midwifery. From the early medical analysts we are informed that to render the patient insensible who was to be operated on, the Egyptian physician administered opium and Indian hemp. With the same purpose, though ludicrously erroneous, the material that was used for the moxa—a species of cautery in which some vegetable substance was allowed to slowly burn on the skin—was composed of hemp.

In the third century Moa-Tho, an Oriental surgeon, also used Indian hemp to relieve pain during surgical work ; and as a more effective agent against pain he also used hasheesh, an extract from hemp.

As a singular way to induce insensibility, Pliny the Second mentions a stone named memphitis, so named from the place of its origin ; this stone having vinegar poured upon it and then being applied to a part of the body, such part could be cut or burned without causing pain. It is probable that the vinegar caused the escape of some gas from the stone, which benumbed the part with which it came in contact. This mode of inducing local anæsthesia has its counterpart in Richardson's plan of partly freezing the part that is to be operated upon.

Items of Interest.

Dioscorides, a Greek writer, mentions the use of *Atropa mandragora* as a means of inducing insensibility to pain ; a decoction was made of the mandragora by boiling it in wine, of which the person to be operated on drank a portion. Pliny also mentions that if one drank of this mandragora, though he were cut or stabbed or bitten by a snake. he felt no pain. And at a later period, Shakspeare, in his ubiquity of knowledge, alludes to the narcotic virtues of mandragora.

In the 13th century the administration of remedies for anæsthetic purposes were so prevalent that it attracted the attention of the Church. As it was then the custom to often voluntarily subject one's self to pain, it was deemed impious to attempt to escape the pains of physical ailment, and that he who did so was opposing the divine will ; hence, in 1287, in a Church Council, Origenes called attention to the practice of physicians who to perform operations administered some soporific which deprived the patients of their senses.

In 1298 it is recorded that Theodoric de Cervia made a compound of opium, mandragora cicuta, lactuca and hyoscyamus, which he placed on a sponge and allowed those to breathe upon whom he intended to operate ; and when the work was concluded, to awaken the patients from the sleep that had thus been induced, he caused them to breathe the fumes of vinegar ; and this failing to arouse, he placed the juice of rue or fennel in their ears.

In the celebrated School of Salerno, in the south of Italy, where medical degrees were first granted to students, one Montagna, a surgeon, gave a somnific portion to those upon whom he purposed to perform operations.

A little later than this, old Bartholin tells us that his preceptor, Marcus Aurelius Severinus, used snow to induce local anæsthesia. For this purpose snow was placed in an oblong vessel and directly applied for fifteen minutes to the part which it was intended to render insensible ; the part thus chilled became benumbed and deprived of feeling ; gangrene did not follow such freezing. The process of Severinus differed in its results in no wise from that of Richardson ; Richardson, instead of snow or ice, using the cold vapor of ether to freeze the part.

In the last quarter of the 18th century, Sassard, of Paris, gave narcotics to lessen the pain of operations, and the shock which results from the same. About the same time James Moore, of England, instead of internal remedies or the external use of cold, acted directly on the trunk of the nerve supplying feeling to the part to be operated upon. And for slight cutting on the limbs this is an expeditious and excellent means to produce insensibility ; for example, to lance a felon, pressure on the median nerve at the wrist will render the work comparatively painless.

Towards the close of the last century chemistry was greatly advanced

and placed on a permanent basis by the labors of Lavoisier; his ingenious nomenclature relieved the arduous work of memory and enabled the student to quickly acquire a comprehensive view of this science. In the midst of his great discoveries Lavoisier fell a victim to the French Revolution. This great man was apprehended on some trifling charges which were never proven, and, despite the efforts of his friends, was condemned to death. Conscious of his innocence, and firmly believing that in the counsels of supreme destiny there yet remained work for him to do, he seems never to have fully realized his danger until informed that the "Republic had no need of chemistry." Yet chemistry could not be guillotined, and, through the impulse given to it by Lavoisier, it was rapidly developed, and furnished medicine with new means of combatting disease.

TOOTH STRUCTURE.

BY. WM. G. BRITTON, D.D.S.

If I were asked to give an histological description of the dentine I should say it is a distinctly lamellated calcareous stroma, very analogous to osseous tissue—in which the calcified expression of the cellular structure of the papillæ is preserved, interspersed with radiating canal-like systems, having no perceptible special parieties, through which run the dentinal tubuli, which are essentially tubuli, and no other thing—their tubular walls occupying two-thirds of their diameter.

These tubuli are never found calcified, except in pathological conditions. I judge this because in all undecalcified normal specimens the walls of these structures may be saturated throughout their entire length with carmine, while the basis substance remains unstained. This characteristic is very marked both in fresh and dry specimens, and is a circumstance that most certainly does not suggest the extreme dense structure that is described by most writers, their indestructibility and insensibility to acids being the result of the presence of oleaginous matter, which may be demonstrated by treatment with potash. Through these tubuli run the supposed "fibers of living matter," of which nothing is known except theoretically. The lamellated structure of the dentine is very beautifully illustrated in teeth treated with potash. This characteristic I have never seen described by any of the authors upon this subject; the most of them, I believe, teach that such a condition of structure does not exist in the teeth. It is, however, capable of demonstration beyond the probability of a doubt.

This condition of structure was first noticed by me about three years ago, and, as it occurred quite accidentally, was something of a surprise at the time, as I had never before had any intimation of its existence. In preparing a tooth for the purpose of showing this structure, it should be placed in a hot solution of caustic potash of a strength of at least 50 per cent. In about fifteen or twenty minutes the cementum may be

readily removed, often slipping from the apex of the root in the form of a cap, and by repeated maceration and scaling the lamellæ of the dentine may be removed down to the pulp cavity. I have often removed these lamellæ in sections embracing half the circumference of the root. It has been suggested to me that this condition was pathological, and was the result of interrupted nutrition. This, however, is not so, because it occurs in all normal young or adult teeth. Besides, the lamellæ are of a uniform thickness, so far as I can judge, throughout the tooth. I have never measured them, but from comparative measurements I judge them to be about 1-12,000 of an inch in thickness. In very old teeth I find their separation more difficult, but it can be accomplished even in such teeth to a limited extent. This structure cannot be seen in cross-sections of the dentine in its unprepared condition, for the reason that the organic and inorganic parts are so intimately blended that the refractive power of the mass is equal in all its parts, but by removing the gelatinous portion the fact becomes so evident that one trial of the experiment will convince the most skeptical.

I have no reputation as a histologist to lose, but I maintain that a lamellated structure can be proven to exist in the dentine, as a normal feature beyond the possibility of a doubt.

Dr. Atkinson says that we ought to be thankful that we know anything on the subject of life, though the best men know but little. We shall never know anything about it till we go to the bottom of function. When the systemic life has left the cadaver there still remains atomic life, and atoms cannot be killed. We have been told that the atomic life of our food is killed, but that statement is an utter misapprehension of the subject. The coalescing of atoms manufactures molecules; plasma is an aggregation of molecules. There is crystalline life, and there is something below that; a crystal is regularly arranged granules, and they are regularly arranged cellular life. The idea that there is an existence without life will not do in this day. When the systemic life has left the body, then is molecular life left, and that is the life which we suck from the beefsteak. Ultimate atoms cannot be deprived of life without reducing them to gases or metals. If the protoplasmic mass is an egg, then the doctrine is true; you can't have bread without dough. All the investigations of Bastie do not prove that the germs are not eggs; they only prove that these small points have not been detected before. An atom is only the two hundred millionth of an inch in size, and that is something hardly possible to conceive. If one side of it is hot and the other cold, that is polarization and depolarization, and that is the point where freezing begins, which is crystallization. The laying together of molecules forms the crystals, and that is the alphabet of the changes that take place in all chemical elements.

OVERCOMING HEREDITY—WHAT SHALL WE SAY TO THIS?

BY MRS. M. W. J.

[In Southern Dental Journal.]

As an illustration of what can be, and has been accomplished through fetal and infantile nutrition, even to the extent of *overcoming heredity*, by carefully and thoroughly following out such instructions as are asked for, for mothers, in my article in your October number, entitled "Education of Mothers," I desire to place on record the case of a family of five children, as narrated to me by their dentist (who was also their father).

First, as to their *heredity*, or, if I may be allowed the expression, their *dental antecedents*.

On the *paternal* side, the grandfather had fair average teeth, but lost them all before the age of fifty, while the grandmother lost all of hers before the age of thirty. The father, appreciating the value of his teeth, kept them in good condition by the most watchful care, but has numerous large fillings. Of his two sisters, (he had no brothers) one wears an artificial denture; the other—much younger—has most of her own teeth yet, but they are very frail, and consist more of filling material than tooth substance.

On the *maternal* side, the grandfather was toothless from the earliest recollection of his children, and the grandmother lost all of her teeth before the birth of any of the grandchildren to be mentioned. The mother wore a full upper and lower set before the conception of her first child; her oldest sister wore six upper front teeth on pivots before the age of fourteen, and a full set before she was twenty; the second has very frail teeth, and only retains them by the greatest care, all of them having fillings; the third has but a few ragged remnants of teeth left, and only waits for courage to have them extracted to wear a full set. No brothers

With these facts in view, what might be expected of the teeth of the third generation, especially in a part of the country where cistern water is used exclusively for cooking and drinking purposes, and where the soil and vegetation are most lamentably deficient in the mineral elements necessary to form sound, strong teeth?

Bearing all this in mind, and having given the subject much study, the father early endeavored to impress upon his wife his views of her responsibility in the matter.

He laid before her his theories of tooth culture by fetal and infantile nutrition, and prescribed the diet and "drugs" by which he hoped to provide suitable nutritive elements, first to the embryo through the mother's nutrition, second to the babe through her milk, and third to the babe itself in its diet, exercise, etc.

But she responded but poorly to his efforts in the case of the first child. The prescribed diet was distasteful, with its brown bread, oat-meal porridge, etc.; the lime water and other prescriptions were unpalatable; in short, to use her own words, "other people's children had teeth, and she supposed hers would, too, and she was not going to subject herself to any such vagaries in support of mere scientific theories."

Being young and self-willed, and not long married, she had things pretty much her own way; but she had the mortification of finding that her baby had soft, chalky, defective teeth, which before its third birthday had already received thirteen fillings, besides which it early suffered the loss of a lower molar, thereby, to a critical eye, marring the perfect symmetry of the features.

Concluding that it might perhaps be wiser to test the matter, radical changes were made in the diet and habits of the first child, and the mother adopted the prescribed regime, partially for the second child, and pretty fully for the three which followed. Bearing children rapidly, the first child being but a little over four years old when the fourth was born, she was, however, unable to give that close personal attention to their teeth necessary to their absolute cleanliness and perfection.

Although five years elapsed between the birth of the fourth and fifth children, yet, as she was an invalid for a year previous to the birth of the last child, and for subsequent years confined to her bed for months at a time, a helpless and hopeless invalid, the children were, therefore, deprived of her personal care and attention, at the most critical period of their dentition. Necessarily left much to the ministrations of ignorant and careless servants, their sixth-year old molars were neglected, while their diet, dress and exercise were often the very contrary to what they should have been, although the father, of course, gave them all the attention possible, in the little time that could be spared from his professional duties and the care of an invalid wife.

But, with all these drawbacks, let us see the results of even the partial following out of the theory of *embryonic and infantile dental nutrition*:

The oldest child had the soft, chalky baby teeth so hardened and reconstructed as to require no further fillings, after the thirteen put in before the third birthday, as already stated, and now, at the age of seventeen, with the exception of a slight irregularity resulting from the unfortunate early loss of the deciduous lower molar, as stated, has a perfect set of teeth, of fine structure and quality, with only very small fissure fillings in two of the sixth-year molars, which, in consequence of inherited defective fissures, required attention within a few months of their eruption; all of her teeth are otherwise intact.

The second child, a boy of fifteen, has as even and sound a set of

teeth as can be found anywhere ; the upper cuspids only, being a little too prominent for absolute regularity.

The third, a girl of nearly fourteen, has thoroughly sound and perfect teeth, with the exception of the fissure fillings as in the case of the first child, but is tardy in erupting the upper bicuspsids.

The fourth child, with the exception of the same slight fissure fillings, has absolutely no imperfection whatever in her teeth, either in size, color, quality or position.

There was every reason to expect very defective teeth for the last child, owing to the state of the mother's health for months preceding and years subsequent to his birth, and his consequent relegation to dry nurses and servants.

It is too early yet to pronounce judgment of his permanent teeth, as he is but seven years old ; but as his deciduous teeth have remained intact with the exception of minute approximal fillings in the upper central incisors, which are now replaced by permanent teeth of fine quality, and as his sixth-year molars are of good texture, I think it may be fairly claimed that *heredity* has been overcome to a remarkable extent.

Were there but one, or even two children in this case, it might be regarded as mere coincidence ; but when five successive children, under the same treatment and with the same antecedents, show the same results, without a single exception, it cannot be considered in any other light than that of *cause and effect*, and the matter of embryonic and infantile nutrition becomes worthy of more serious attention than would be accorded a mere *theory* unsupported by *facts*.

Do not lie by saying you are busy when you are not ; that your business is rushing when it is dull ; that your appointments are for many days ahead, when you have none. Be truthful, always and in everything truthful ; your patients will respect you for it.

The following is quoted as an extract from a boy's composition on "babies." It is, doubtless, purely a figurative boy that is meant : "The mother's heart gives 4th joy at the baby's 1st 2th."

No business can be sustained without promptness. Be careful how you make appointments, and then fulfil them.

To have the least expansion of plaster, mix thin with warm water, adding a little salt. Though the mixture is not so strong as when less water is used.

EXTRACTING TEMPORARY TEETH.

BY DR. N. W. KINGSLEY, NEW YORK.

The subject assigned to me by the executive committee was that of "judicious and injudicious extraction." That is a very large field, to go over which in a thorough manner would take us many evenings. I am not able to exhaust it, and I shall not try to do so. There is not a man here who should not be able to contribute something to the common fund of knowledge on such a subject. Dr. Clowes has so contributed. I had intended beginning this discussion by reviewing the order of the shedding of the temporary teeth and the eruption of the permanent set. My mind was very clear upon that order, as I have almost universally seen it in a practice of more than thirty years. And my mind was not only clear from my own observation, but it corresponded with the order as recorded by, I believe, all other observers, excepting Dr. Clowes. I was astounded when Dr. Clowes gave, first the lower central incisors, then the canines, then the bicuspid, etc. Well, he has lived longer than I have and been longer in practice, and it must be that he speaks from average results; perhaps when I have practiced as long as he has I shall have seen enough cases of an order of eruption so entirely different from what I have seen heretofore, to make the average the same as his; but it will have to be uniformly different hereafter from what it has been heretofore to bring such a result. Gentlemen, let me give you the order of eruption, as I have observed it. First, the centrals; second, the laterals; third, more likely the second bicuspid in place of the second temporary molar; fourth, the first bicuspid; fifth, and last, the canines. The canines in both the upper and the lower jaws are the last of the temporary teeth to leave the jaw. There are occasionally exceptions in which that order is not followed out, but they are very rare, and to expect anything else until we see the evidence of something else is to expect something that is not at all likely to happen. To base our practice upon any other order of eruption, and upon an order of eruption that is an exceptional order, is, I think, to make an egregious mistake. If the order I have indicated is followed out, I think we should see judicious extraction, while if an order is followed that we only see in exceptional cases, I think we should find most injudicious extraction. I have seen so much irregularity of the teeth caused by following advice of the kind that Dr. Clowes has given, that I wish to raise my voice in warning to every young practitioner to guard against it; and I should say, as emphatically and dogmatically as a man can pronounce, that he would be just as certain, if he followed the advice of Dr. Clowes, to produce *irregularity*, as that the order of eruption that I have indicated is universal. I have no means of giving the number of cases that I have seen where

the canines of the permanent set were forced entirely out of line, standing outside of the jaw completely, and the lateral incisors and bicuspid standing close in contact; for no other reason, apparently, than that the temporary canines had been removed to make room for the lateral incisors.

Let me here read a passage from my "Oral Deformities" (page 7): "Whatever may be the inducement to remove any or all of the deciduous teeth prior to their period of shedding, the canines should be retained until there is ample evidence of the early emergence of their permanent successors, unless the health or comfort of the child would be sacrificed in so doing." This sentence, which I wrote more than a dozen years ago, and which was the result of long years of close observation, is printed in italics, so that no such thing would ever follow thereafter in the practice of any one who paid any attention to the sentence, and a dozen years of experience since then only confirm that opinion; and if I were to print that sentence again I would put it in double caps, if thereby I could make it stronger.

Passing from this, let us refer to the general subject of the extraction of the temporary teeth and the influence that it may have upon their permanent successors. The idea has been somewhat generally entertained until within the last few years, and, perhaps, is now, that the removal of the temporary teeth will cause shrinkage of the jaw, and that consequently the second teeth will be crowded and irregularly placed. This is a mistaken notion; for there is evidence enough that the premature removal of any of the temporary teeth, with the exception of the canines, is not likely to cause any serious disturbance to the jaw or the dental arch either in its regularity, the order of eruption, or in any other way; so that, while it is desirable to keep the temporary teeth in position until the eruption of their successors is determined, there are many cases that come into our hands where the comfort or the health of the child demands their extraction. The fear that the jaw will shrink, as a result of the extraction of the temporary teeth, is unfounded; jaws will develop, even if there is not a temporary tooth in the mouth, or a permanent one either, for that matter. The growth of the teeth is a function which goes on entirely independent of the development of the jaw, and the jaw is bound to develop to its full size whether the teeth make their appearance upon the surface or not. Whatever apparent contraction may be observed is confined entirely to the alveolar process. It is the tendency to close up the vacant space that may exist between any permanent teeth that are erupting, that makes even the appearance of shrinkage of the dental arch; so that, when the canines have been extracted prior to the time for the eruption of their permanent successors, and the permanent teeth each side of that space are nearly fully developed, you will find an inevitable

tendency of the permanent teeth to crowd over the vacant space and approximate each other, and in a great many cases they come in actual contact.

The removal of a canine to make room for an erupting lateral seems to be necessary because the space between the points of the temporary canines is not nearly so great as the space that ultimately exists between the points of the permanent canines, and so it is not unreasonable for one who has not reflected upon the subject to say: "Here are two great big central incisors in the upper jaw coming through to take the places of two little diminutive temporary centrals. There is not room for them; we must *make* room by taking out the laterals." The extraction of the temporary laterals leads, by the same reasoning, to the removal of canines when the permanent laterals present themselves. But, if you had not removed four teeth to make room for two, you would have found that nature would have done the work which you are anticipating. It is very rare that nature does not come to the assistance of nature. It is the fulfillment of a law of nature that is pushing through those central incisors; nature is looking out to find a place for them, and she will, in the majority of cases, certainly and inevitably do it. There is very little to fear from the premature loss of the temporary central incisors.

A child of mine told me one day, when she was between three and four years of age, that one of her upper teeth was loose. I examined it, and, to my astonishment, found it had all the evidence of having no root at all. Not long after that it became so troublesome that I took it out. I looked anxiously for the results in that case. It was three or four years before the permanent successor of that tooth made its appearance. In the meantime, I saw the space enlarge—widen and widen—until there was ample room for the permanent central incisor. The other temporary central remained the usual allotted time, while in the case of the one that I removed there was complete absorption of the root so long anterior to the time for the appearance of its permanent successor. We might digress here to a profitable discussion upon the correlation of eruption and absorption. Is it the pushing forward of the permanent tooth that compels the absorption of the root of its temporary predecessor? Or is it the absorption of the temporary tooth that permits its permanent successor to advance in that direction? Arguments have been made on both sides of the question; and if I were disposed to engage in an argument for the sake of argument, I should be perfectly willing to take either side, for I could cite so many instances that would seem to prove that absorption of the temporary tooth was caused by the permanent tooth pushing forward and trying to find a place, that the ordinary juror would give me the verdict; and, on the other side, I could bring so many apparent proofs that the

roots of the temporary teeth are absorbed without any reference to the presence of their permanent successors, that from another juror I would gain my case.

I think it would be impossible for any individual to give a final determination to the question of what is the rule for the removal of the temporary teeth. He could only give a principle, and the practitioner must be governed by judgment and experience in the application of that principle. There may be a thousand and one things and circumstances to vary different cases and determine the action that is proper in them. You can formulate a principle only; you cannot establish a rigid rule.

Dr. Jarvie. Do you think the extraction of the second temporary molar before the eruption of the first sixth-year molar would have any influence upon the position of the sixth-year molar?

Dr. Kingsley. I do not think it would. Before the period would arrive for the sixth-year molar and its roots to be so fully developed that it would have a tendency to move forward, the crown of the second bicuspid, which takes the place of the second temporary molar, would already, in all probability, be so fully formed, if not erupted, that it would hold the sixth-year molar in its place. I believe that the study of any anatomical specimens which showed the teeth of that age, would lead us to believe that such would be the reasonable result.

I have been requested to say a few words on one or two points, but which have been partly included in what I have already said. To make the illustration more definite, picture to your minds a person of adult age, with all the permanent teeth sound and occupying their proper places in the dental arch, *with the exception of one or both canines*. In this picture we see a temporary canine, firm and solid in the jaw, with no apparent or marked fullness on the gum above it, either outside or inside, certainly no pointing of the permanent teeth through the gum, or any indication of its immediate eruption; the temporary canine is firm and without decay. The question is: Shall we extract this temporary canine or not? Recently I saw a report of a case in which the gentleman says that he removes temporary teeth when the time arrives for them to be removed, without any reference to the appearance of their permanent successors. He expects that the permanent tooth will make its appearance on time; he believes that the presence of the temporary tooth is retarding the development of its successor, and as the time has arrived for that successor to be erupted, he extracts the temporary tooth, and he says he has found it good practice in a great many cases. I know that I have seen it equally bad practice in a great many cases. A grandmother, sitting in my chair to-day, when I spoke of a left superior canine in her mouth as being a very fresh-looking tooth, said, "it did not make its appearance until two years ago." I asked

her, "was the temporary tooth in place all that time?" "No." "When was it taken out?" "During the war." "By whom?" "By the elder Dr. Flagg. I know it was during the war, because at the time he took it out we were talking about the battle of Vicksburg." For eighteen years that lady was with a vacant space there, wondering why the permanent canine did not put in an appearance. Was it judicious extraction to remove that temporary canine at that time? We do not know all the circumstances which led Dr. Flagg to extract it, but, with the evidence now before us, we should say it was injudicious.

A few days ago Dr. Hill, of Brooklyn, sent to me a lady of that age which none guess: I have seen women of forty who did not look older, and I have seen women of twenty-five who looked as old. She had a temporary canine in the upper jaw, right side, and there was the point of the permanent canine close to the central incisor on the inside, between the lateral and the central, but closer to the central. It was pointing in a way to indicate that it was lying diagonally in the jaw, and the temporary canine filled the entire space between the lateral and the bicuspid, being an unusually large temporary canine and peculiarly handsome in color, and I doubt whether a cursory observer would have discovered that it was a temporary tooth. It showed no movement on taking hold of it with the fingers. Dr. Hill sent a note asking my advice as to the removal of this temporary tooth. My answer was: Certainly not, at present; a few months hence we may change our minds. That will illustrate the opinion I would hold and the advice I would give under such circumstances as that.—*New York Odontological Society in Cosmos.*

AIR CHAMBERS IN ARTIFICIAL DENTURES.

ED. ITEMS:—The tendency to inflammation in rubber plates with air chambers is often caused by sharp edges or margins, particularly around the air chamber. The custom among some dentists is to run a ball burnisher or round end instrument around the metal pattern or carved air chamber until a slightly rounded groove is formed, which leaves a raised, half round edge on the margin of the air chamber of the finished dentine. Now, for another and further improvement, take a round bur, No. 4 or 5, with the dental engine, and cut a groove around the lower inside edge of the air chamber depression. With this improvement you have a denture that, when the rugæ or mucous membrane fills the air chamber space, it has no sharp corners to come in contact with, but gentle curves that form no lodgment for impurities. It is also the easier kept clean.

NEY CHURCHMAN,
Portland, Oregon.

ARTICLE 3.

ANSWERS TO THE QUESTIONS OF THE NATIONAL BOARD OF DENTAL EXAMINERS. FOR THE BENEFIT OF DENTISTS AND OTHERS.

PREPARED FOR "ITEMS OF INTEREST" BY W. S. ELLIOTT, M.D., D.D.S.
GOSHEN, N. Y.

"Describe the process of digestion."

Foods containing nitrogen, as lean meats, eggs, milk, etc., do not depend so largely upon the chemical reaction with the saliva for their reduction. The viscosity, however, of the sub-maxillary and sub-lingual saliva is important and necessary to prepare the bolus for easy deglutition. The liquefaction (porphyration) of the mass comes entirely under the province of the juices of the stomach. The adaptability of the requirements is forcibly illustrated in the fact that the parotid saliva of the dog is wholly inert on starch, while the development of the glands is held in correlated subjection to the comparatively large size of the sub-maxillary and sub-lingual glands, made coincident to the demands of the carnivorous instinct.

The human economy calls for a mixed diet, including in a proper proportion the nitrogenous and non-nitrogenous constituents. It is therefore in perfect harmony that the several glands are modified in their respective functioning.

The bolus now having been received into the stomach, a more decided change is inaugurated, quite analogous to that of insalivation in that the aliment is still subject to the chemical law of hydration; though whatever of starch that may have escaped the reaction in the mouth, it remains still unaffected by the gastric secretion proper. Doubtless, however, the saliva that is swallowed with the food continues, to a certain extent, to manifest its chemical influence.

Porphyration is the first step toward reduction in the stomach. This is a pulverizing, accomplished by the combined influence of the gastric juice and the mechanical movements of the muscular walls. The solid portions of the food are thus gradually reduced in bulk, resulting in a semi-liquid mass, to which is usually applied the name of *chyme*, but which term has now too general a significance to meet the more complete understandings of the physiologist. This chyme is further liquefied and progressively differentiated by hydration into a variety of products termed *peptones*; spoken of as *dyspeptones*, *para-peptones*, *meta-peptones* and *ortho-peptones*. These successive changes are only made possible in the presence of corresponding ferments, the powers of which are evidenced in the special characteristics of the several products.

It will, then, naturally be inferred that the mass product, the chyme, is incapable of entering upon the career of nutrition. This is true, and

unless a normal completeness of the liquefaction is instituted, the system will, sooner or later, respond by the evidences of a disturbed condition, and the pains of indigestion.

The true nature of the intermediate ferments is not fully understood ; it is only as a whole that the dissolvment is considered. This, under the nomination of *pepsin*, is held in solution by the watery vehicle in association with certain acidifying elements which enter as normal constituents. The gastric juice has no effect upon starch or fats, other than to so dissolve the proteid envelope of the fat globules as to subdivide or emulsify them preparatory to a still further division in the duodenal tract.

It is the nitrogenous food which is specially adapted to stomachal digestion. The proteids therein contained are all finally converted into true peptones, more or less accompanied by the other mentioned adventitious products.

The acid which is deemed essential to complete digestion is the hydro-chloric— H Cl , a resultant probably of the splitting up of the molecule of salt—sodium chloride, Na Cl , which is taken into the system with the food, and the substitution of an atom of H for that of the Na .

The final product of the digestive act, thus far considered, is the perfect peptone now made ready to be assimilated and to enter upon a career of nutrition, whereby are fulfilled the purposes of the several organs in their complete integrity. The chyme is therefore made to pass the pyloric orifice of the stomach into the duodenum, to mingle there with the product of several to be mentioned glands.

Stimulated by the presence of the aliment, the pancreas gives forth its juices to mingle with and to further modify the mass. This excretion is very analogous to the saliva, insomuch as it is powerful to change starch into glucose, while, at the same time, it acts upon the nitrogenized constituents, emulsifying the fats and further converting the proteids into peptones. A flow of bile is also excited, but not till the aliment has passed the territory of the bile duct. This fluid has no decided digestive power, and is not concerned in the reduction of the aliment. Its alkalinity, however, neutralizes any remaining acid that may have been left by the product of the stomach, and it also facilitates the onward movements of the mass towards the intestines.

While the digestion of the stomach is acidulous, that of the pancreas is decidedly alkaline. In a debilitated condition this may oftentimes be enhanced by the administration of an alkaline salt, as that of the stomach is by the administration of hydro-chloric acid.

Besides the fluids excreted by these glands, there are others of minor importance in the digestive function. We refer to the enteric glands.

If not entirely negative in other respects, they serve to lubricate the bowels, and thus to facilitate their movements.

The food, having been thus modified by the several juices, then passes through the small intestine by means of its peristaltic movements; quite rapidly at first, but more slowly as absorption increases the consistency and diminishes the quantity of the substance.

SEEKING TO STEAL FROM DR. S. C. BARNUM HIS HONOR.

BY DR. G. A. MILLS, NEW YORK.

In June last I met Dr. S. C. Barnum, of rubber dam fame, in the S. S. White up-town house, New York. I was attracted particularly to him by his decidedly changed condition. I found him a picture of a distressed victim of nervous exhaustion; he told me he had not been able to operate at the chair for some months, but was doing something in artificial work. After a little general conversation, he said to me: "Dr. Mills, were you not present at the meeting of the old New York Society, held in Cooper Union, the evening my uncle, Dr. Clewes, introduced the use of the rubber dam and presented it to the dental profession as coming from me? This was, I think, in 1866." I replied: "I was, and in 1874 I read a paper before the American Dental Convention, at Saratoga; subject, 'What next?' In this I gave the history of the introduction of your dam, and the manner in which it was received. I said, 'and after the enthusiasm had subsided, Dr. George E. Hawes arose in his peculiar style, and quaintly asked, 'What next?' This article is in print in one of our dental journals.'" "Well," Dr. Barnum says, "Dr. Mills, I am exceedingly troubled that an effort is being zealously used to take all the *credit* from me and to place me in a very unenviable position before the whole profession, branding me as dishonest, for, as you know, I have been the recipient of several tangible and valuable testimonials." I said to him: "You need have no fear; the profession will stand by you. No man can afford to promulgate such a claim of priority, for it comes too late."

He says: "Do you know that Dr. Frank Abbott, President of the New York Dental College, is teaching the students that Dr. LaRoche, Sr., is the *originator* of this dam? Dr. LaRoche is the vice-president of the college."

I replied to him: "You be patient, and if these men have the audacity to make this claim, you will find your friends will come to your rescue. As I live, you can count on *me*, no matter what can be brought as proof on their part. That they should allow all these years to pass, and be all the time among us, knowing all that has been done, and that you were being made the receiver of so many favors, and not a lisp made to disapprove your claim, will strike every high and fair minded

member of our profession as a great injustice, and they will say, with one acclaim, 'Too late! too late!'

I told Dr. Barnum it would produce such a tidal-wave of disapproval, that no man or men could afford to face. I left him with the prediction, that they would never *dare* to uncover such claim, for I did not take either of these men to be foolish or crazy. My prophecy has not proved true.

At the meeting of the first District Dental Society, held November 6, 1883, the subject of "Loose Teeth, Historically Considered," was down on the bulletin as the subject for the evening, but, to the surprise of all, Dr. LaRoche, Sr., presented a paper, claiming to be the originator of the dam, and read affidavits as proofs. His date is fixed in 1857, some ten years prior to Dr. Barnum's.

I will not attempt to describe the very apparent impression that was produced on those present. All kinds of imprecations were distinctly heard murmuring from all parts of the room. Dr. Abbott made an attempt to defend Dr. LaRoche's claim by saying that at the time Dr. Barnum's claim was made known he did not think much about it, and as it was not very enthusiastically received, he let it pass.

To say I have a feeling of astonishment that I find no language to express, will be only saying what will be echoed from every nook of our profession where this blessed auxiliary has been demonstrated. I do not propose to discuss this matter, but leave it in the minds of our whole profession, "who will deal justice to whom justice belongs," "honor to whom honor is due," with a suggestion which presents itself forcibly to my mind: "What will we do about it?"

As we here all know Dr. S. C. Barnum to be a man of modest pretensions and an upright member of our profession, who has gone in an out before us all these years, quietly and unobtrusively, and we cannot but feel that to have his claim called in question at this late date, and considering all the publicity given it, and also considering his quiet and polite demeanor, his failing health, it is only kind and just to give him our sincere and hearty co-operation in maintaining more tenaciously the meed of praise already accorded to him. I feel that to italicize these expressions is not enough; but it can be done in a more tangible and practical manner. Let us one and all inclose to him a dollar postal note, with our own words of encouragement and praise. By this we will be putting flowers on his home mantel-piece that shall shed a grateful fragrance, helping him to make his last days his best. Dr. Barnum is not over-supplied with this world's goods. His opponents have no need.

G. A. MILLS, New York.

Dr. S. C. Barnum's address is 104 West 45th St., New York City.

[We cheerfully send *our* dollar; who else will swell the pile? Not a dentist who uses the rubber dam should fail to respond. Dr. Barnum could have gotten out a patent and become rich; for who *would* do without the rubber dam?—ED. ITEMS.]

LETTERS FROM A MOTHER TO A MOTHER ON THE FORMATION, GROWTH
AND CARE OF THE TEETH.

BY MRS. M. W. J.

LETTER I.—HOW THE BODY IS BUILT UP—IMPORTANCE OF THE TEETH IN
THE HUMAN ECONOMY.*My Dear Young Friend :*

A year ago you left us, a happy bride ; you then felt that nothing could be added to the completeness of the tie binding husband and wife ; now, however, you write me that a still greater fullness is to round the measure of your life ; you ask me to tell you how to live so that the *new life*, now being built up from your own heart's blood, may be physically pure and perfect.

Especially in regard to the formation, growth, and care of the teeth do you desire advice and information.

Much is involved in these momentous questions ; they have formed the subject of earnest investigation and profound thought ; the laboratory of the chemist and the magnifying eye of the microscope have aided in solving the mysteries of life.

You know that your body is built up, little by little, from the materials gathered from your food, aided by exercise, fresh air and sunlight.

From your food are gathered the elements that knit the bones which form the framework ; the flesh which clothes the bones ; the blood that courses through the veins ; the nerves, the muscles, and the brain which controls the whole.

If the food does not contain the various elements necessary to build up these several portions of the body, so different one from the other—the bones solid and unyielding ; the flesh so delicate and tender ; the blood so brilliant in its coloring, rushing through the veins and arteries, distributing the life-giving elements to every portion of the system, each little drop coming back to the heart every half minute, bringing its portion of that which has been rejected as worthless—disease and death will ensue.

In the meat and the bread, the fruits, vegetables and other articles that make up our daily food, must be found all the constituents of bone and muscle, flesh, blood, and brains.

This food must not only be taken into the system, but it must be thoroughly prepared by mastication for digestion in the stomach, while the system must be in such a condition of health as to *assimilate*, or appropriate and make use of the food, as it passes into the circulation.

Without good teeth there cannot be thorough *mastication*.

Without thorough mastication there cannot be perfect *digestion*.

Without perfect digestion there cannot be proper *assimilation*.

Without proper assimilation there cannot be *nutrition*.

Without nutrition there cannot be *health*.

Without health, what is life?

Hence the paramount importance of the teeth.

LETTER II.—WHEN AND HOW THE TEETH ARE FORMED.

Because the teeth are of such importance in the building up of the body, the creative energies are directed toward their formation at a very early period.

The dimpled hands and rosy feet of the baby, which so delight the eyes and heart of the young mother, are perfect in form and shape at its birth; the first pearly tooth does not make its appearance until many months later, and six years must elapse before the permanent teeth begin to come into place.

Six months before the birth of the child the germs of the twenty baby teeth are lying, side by side, in the dental groove, while the germs of the permanent teeth are all lying hidden in the tender gums when the baby is born; and yet how many months and even years must elapse before the last are called into active service.

And all this time they are growing. Taking their shapes long before the little limbs bear any resemblance to the plump legs and arms that are so beautiful to the mother's eye, the teeth are being built up, atom by atom, as the necessary elements of tooth food are furnished by *the mother's blood*.

For seven months before, and seven months after birth, the first little baby-tooth is growing—at first a mere sac, containing the pulp, yet bearing the shape of the future tooth. In this sac, and around the pulp, are deposited the calcareous elements, or lime-salts, gathered from the mother's food, of which the tooth is formed.

Little by little, the tender, living pulp is surrounded by dentine, the bony substance forming the body of the tooth. Over this is laid the glassy outward envelope of enamel, dense and impervious to the healthy fluids of the mouth; and thus, perfect in substance, size and shape, the crown emerges from the gum, the root growing longer as the walls of the socket build up around it to hold it firmly in its place. A minute opening at the apex of the root, called the foramen, gives passage to a nerve, a vein and an artery, through which the circulation is carried on that conveys the nutrient elements to every portion of the substance; for the teeth, dense as they appear, are endowed with the most sensitive nerves, and are subject to the same laws that govern every other portion of the human organism, a change of particles—composition and decomposition—going on, slow but constant, as long as life lasts.

If the great Creator deems the little baby-tooth of sufficient import-

ance to require fourteen months for its growth and development, while nine months suffice for the eye or the ear, should not the mother look upon it as a precious jewel, worthy her most watchful care lest it suffer injury by her neglect and carelessness?

Should she not earnestly seek to learn what are those elements of tooth food which she alone can and must supply, and where they are to be found in the greatest purity and abundance?

She does this much for her flowers and her bird; can she do less for her baby's teeth, on which depend so largely its future health and happiness?

LETTER III.—WHAT THE TEETH ARE, AND OF WHAT THEY ARE FORMED.

That you may the more readily comprehend the necessities of the teeth, and how you may provide those of your babe with the proper elements to make them so sound and perfect in structure that they will last as long as life itself, with proper care and treatment, we will now consider "What the tooth is," and of "What elements it is composed."

We have seen that the tooth is an organized body, each one having its own nervous and circulating system.

The central cavity of the tooth is occupied by the pulp, which is simply an enlargement of the nerve, vein and artery, mentioned as passing through the apex of the root, and thus connecting with the general nervous and arterial systems.

From the pulp ramifies a circulatory system, which carries the nutrient elements to every portion of the tooth substance, building it up sound and strong if the requisite elements are brought to it; leaving it soft and cartilaginous if the supply is insufficient; even taking away from the mother's teeth the materials for those of her babe, if she does not supply a sufficiency for both.

The pulp is surrounded by the bony substance of the body of the tooth, called dentine, which, being liable to decay by contact with various external agencies, is protected by a thin layer of the most dense material found in the human system, called enamel; its appearance is familiar to all, being of a fine glassy texture and smoothness.

The root, being entirely hidden in the gums and bony socket, and thus protected from injurious contact with foreign elements, is covered with a less dense material than either the enamel or the dentine, called cementum; this material bears a closer resemblance to bone than any other portion of the tooth.

Now, what is bone?

If you have ever lived in the country, and know anything about raising chickens, you know that when eggs are laid with the shells too thin, as often happens—sometimes but little more than a mere skin

confining the contents—bones, left from the meat used at table, are heated and pulverized, and fed to the hens, to furnish them with lime for their egg-shells. When bones are so thoroughly burned as to destroy the animal tissues and leave only the mineral elements, boneblack is the result, of which eighty-eight parts in every hundred are the phosphate and carbonate of lime, the remainder being mainly carbon. The teeth, as they stand in the mouth, differ from bone mainly in the much larger proportion of these elements, about eighty parts in every hundred of the constituents of tooth substance being the phosphate and the carbonate of lime, phosphate of magnesia, etc. If teeth are burned, the mineral elements remain; if they are dissolved in strong acids, the lime-salts disappear, and a cartilaginous or jelly-like mass remains, being the animal basis with which the lime-salts are combined in the cells of which the tooth is built up.

Thus the constituent elements of tooth substance are both animal and mineral, by far the greater portion of the latter being lime in its various combinations.

You must therefore furnish your blood, through your food, with a sufficient supply of lime to not only nourish your own bones and teeth, but also to build up those of the little being for whose physical proportions you are henceforth responsible.

Upon you, and you alone, is laid this responsibility. The physical impress of the father was stamped, once for all, upon this new being at the moment of conception. If for *good*, you will only make it better; if for *evil*, you alone can apply the remedy.

From your system alone can the nutrient elements be drawn.

If the supply be deficient, upon you alone will fall the consequences, and they are often very serious.

If the supply be very meager, your own bones and teeth will be drawn upon to supply the deficiency; your teeth will become sensitive and painful, and decay will set in; your muscles will become pale and flabby, and you will feel weak and languid; even the very brain itself, in extreme cases, will become enfeebled from lack of the phosphoric acid withdrawn to form the phosphates of lime and magnesia entering into the composition of the teeth and bones.

In the words of Dr. G. R. Thomas: "The child, while dependent upon the mother, gets lime, phosphorous, silex, potash, and all the other elements of which the teeth are composed, in just such proportions as she gets them from the food nature provides, in their natural proportions. But where can the child, in its forming state, get these necessary elements, whose mother lives principally on starch, butter and sugar, neither of which contains a *particle* of lime, potash, phosphorus or silex? * * * Nothing short of a miracle can give her a child with good teeth, and especially with teeth well enameled."

I hope that I have now succeeded in impressing upon your mind a sense of the solemn responsibility you have assumed, in taking upon yourself the duties of maternity, and that you are now ready to ask me, "Where shall I find these elements?" and that you feel willing to make some little self-sacrifice, if necessary, in the matter of diet, in order to benefit not alone your unborn babe; the results, if you are faithful to your trust, will be traced through future generations, and your posterity will call you blessed.—*Southern Dental Journal*.

TREATMENT OF EXPOSED PULPS.

BY GEO. HENRY, L.D.S.

[Read before the Odontological Society of Great Britain.]

Allow me to detail my treatment in an ordinary case of exposure, and by exposure I mean a pulp so actually visible and uncovered, either by accident or the intrusion of caries, as to be under the septic influence of decaying matter, or the fluids and atmosphere of the mouth. To be brief, we will suppose that in preparing a cavity on the mesial surface of the first lower molar, the pulp has been needlessly but accidentally exposed, and perhaps punctured. If pain be occasioned, this is readily alleviated with one of the favorite anodynes, such as aconite and chloroform, camphorated chloroform, or, better still, carbolic acid. The cavity finally prepared, a small pledget of wool charged with carbolic acid is kept in contact for from five to ten minutes, according to the extent of the exposure; for if the puncture is only sufficient to cause a slight bleeding, it will not be necessary to bare the pulp, but if a visible exposure has to be dealt with, this should be positively blanched, and so prepared for innocent contact with a protecting layer. This layer, consisting of a small circular or oval bibulous pad, moistened with carbolic acid, is carefully adjusted in juxtaposition with the blanched pulp, overlapping the aperture about half a line or more. This done, a few seconds suffice to mix the oxyphosphate, arranged ready to hand on a glass palette. Insert the same without undue pressure, hollow it out and trim the edges, undercutting for the permanent metallic plug, which may be inserted as soon as the oxyphosphate has firmly set.

When disease has accomplished the work of a simple exposure, the treatment will be almost identical, apart from the previous existence of toothache, which would involve temporizing. In such a case the odontalgia would be relieved locally by a selected anodyne dressing protected with mastic, the gums painted with iodine and aconite, and in inflammatory cases an aperient prescribed.

Thus far, many are accustomed to practice almost the same opera-

tion under similar circumstances. But, I ask, has this plan been consistently carried out with diseased pulps, to which I consider I have proved it to be applicable in practice?

I will now describe my treatment of suppurating pulp; and it is satisfactory to know "that the suppurative process"—I quote from Wedl's 'Pathology'—"is almost always developed as a sequence to caries, and is limited to the superficial layer of the body of the pulp or of the root portion corresponding to the carious locality." This condition ascertained, I remove all trace of decay, and then syringe the suppurating surface of the pulp with carbolyzed warm water, which soon reveals to what extent the pulp has suffered. The next point is perhaps the most important that I have to urge, since to its omission may, I believe, be traced the numerous failures which are deplored by all who have earnestly desired to preserve such pulps, but have had to seek refuge in devitalization. This next step is to cut down the surrounding walls of dentine, so as to be on a level with the surface of the pulp, which may in all cases be accomplished with suitable sharp spoon excavators, and that invaluable aid, the burring engine, so securing the direct apposition of a temporary carbolic acid dressing. This I have rarely to repeat new more than twice, at intervals of a few days, governed by the perfection of the previous treatment, and when the tooth does not admit of being stopped at the second interview, I protect the fresh dressing with mastic. The suppurating surface having been changed to a healthy one, I proceed to apply the bibulous layer, securing a strict adaptation in contact with the blanched pulp, when the operation is completed by filling temporarily with oxyphosphate, or lining the cavity with this material and inserting a good amalgam filling; or if a gold plug be contemplated, it is wiser to fill with oxyphosphate and defer the gold filling for a reasonable time.

It is scarcely needful to add that freedom from tenderness on external pressure—that is, from periodontal mischief or neuralgic irritation—must be ensured previous to plugging.

Difficult situations may be met by freely filing away the tooth; and I am bound to contend from experience—without wishing to lay down a hard-and-fast rule, each case presenting its peculiar features—that the above treatment, with certain modifications, meets all cases of exposed dental pulp, be they healthy, irritated, inflamed, or suppurating, when this organ has not become irreparably gangrenous or dwindled to the condition of dead matter only to be met by extirpation and root-filling; and I think this treatment, carefully carried out, commends itself for:

1. Simplicity and painlessness.
2. Time saving.
3. A general absence of supervening symptoms.

4. Its wide applicability to all cases of exposed vital dental pulp; and,
5. Its *rationale*, taking the peculiar *habitat* of the pulp into consideration, is sufficiently analogous to the surgical treatment of other lesions of the body.

Constitutional treatment must depend on the presence of systemic disturbance, which does not of necessity accompany the local mischief, and when it does it is commonly sympathetic. With this impression I may incur the charge accredited to most writers on this subject, of being too much engrossed with the "local." Still, I am persuaded that topical treatment stands first in the way of removing local irritants, and that we have a right to count much upon the recuperative power of the pulp, that *vis medicatrix naturæ* which befriends us in the treatment of other lesions of the body, from cuts, splinters under the skin, burns, etc. The peculiar diathesis of the patient may favor or retard the progress of healing, and in so far the local treatment may be seconded by judicious antiphlogistic remedies, aperients, and astringent lotions. Constitutional depression of vital power or exhaustion after illnesses simply points to the necessity for temporary local expedients; but the principle of the local treatment advocated must not be departed from.

I desire to give emphasis to one feature in the treatment, and that is, whatever the state of an exposed pulp, short of gangrene, *cut down to it*, or level the adjacent dentine with the pulp's surface. I am convinced we cannot treat it effectually so long as a space exists between the pulp and the aperture leading to it; a fact which has more than once been impressed upon my mind through a carbolic acid dressing failing to blanch the pulp; showing that the caustic had not touched it, as the inevitable result of contact is a white film or eschar. It is at this point that most operators stop short in their conservative treatment of diseased pulps. Mr. Woodhouse says: "When I ascertain that the pulp appears shrunk into the cavity, I at once decide to destroy it, as I consider it a sure sign that its vitality has been lowered, and that it would therefore perish under conservative treatment." A deduction which I believe to be erroneous.

If the pulp be inflammatory, it may with advantage be made to bleed, so relieving the hyperæmic condition, after which gentle syringing with carbolized warm water will have a beneficial effect, and prepare it for a temporary dressing.

When an aching tooth is not relieved in reasonable time by anodyne treatment, I have frequently found that exposing the pulp is effectual in affording relief, and in some instances suppuration will be found to have commenced, this morbid process under compression giving rise to aggravated pain.

I think the happy results attending the above treatment tend to show

that the local destruction of the odontoblast layer does not prevent ossification of the pulp; but the greater our success the less our opportunity of gaining information as to the actual physical changes in the pulp so treated. Time will undoubtedly clear up the difficulty, when such teeth, from remote causes, may come back to us.

Failures may generally be traced to one of two causes: defective manipulation in difficult situations, or the presence of free dentine bodies in the pulp, at once so difficult to diagnose, and so prolific of neuralgic irritation.* When we are exceptionally baffled, and untoward symptoms succeed our efforts to save a pulp, we have an alternative in the operation of rhizodontology, and I, among others, set a high value on this expedient; but it is only when the first warning of irritation in a stopped tooth has been too long neglected that drilling a vent divulges a dead pulp, and an irritated pulp may be thus relieved without necessarily leading to death.

Fifteen years ago arsenious acid was looked upon in America as the most important article in the dental pharmacopœia, because it enabled the dentist to achieve far more in conservative dentistry than any other one thing. But this so-called "conservative dentistry" meant the preservation of a tooth minus the pulp—"the shell without the kernel." I trust the dental student of to-day is imbibing a truer perception of what should be paramount in preserving the teeth—I mean the conservation of the dental pulp.

In conclusion, let me quote a conservative testimony from the far North: Dr. Brazier, of Stockholm, said at a discussion on this subject at Hamburg, in August last, "he never destroyed a pulp. The day had gone by when arsenic should be used, unless a dentist wished to cultivate a batch of abscesses." No doubt many, East and West, are working in the same direction.

*A lady resident at St. Leonards had suffered periodically from the most troublesome neuralgia, and had associated this with an upper second molar, right side. The tooth had been ably plugged with gold in Manchester; unstopped and refilled by a much respected practitioner in London; and this annoying ordeal was again submitted to at my hands, perfect comfort having been enjoyed for ten days before I ventured to stop the tooth with white enamel. I should mention that caries had not reached the nerve, and the cavity, easy of access, was on the buccal surface. A fortnight only elapsed when the patient returned, bent upon having the tooth extracted. This done, I split the tooth open with a vice, and, occupying the upper part of the chamber of the pulp, were found two large, independent nodules of secondary dentine.

Cure for Tape-Worm.—Dr. Lentel recommends the use of ether in the following manner: Two-thirds of an ounce of ether is given at one dose, followed two hours afterwards by an ounce of castor oil. The worm is usually discharged entire, with the head intact.

SEPARATING MODEL FROM IMPRESSION.

To DR. G. W. ADAMS, Bristol, Pa., and others:

To say that the method adopted by Drs. Reese and Atkinson, in the treatment of impressions is wrong, I think is entirely gratuitous, since I know that Dr. Reese never oils his impressions, but treats them precisely as published, with beautiful results. But allow me to refer to something still better:

Before mixing the plaster for the impressions, sprinkle into the water a few drops of a solution of pure carmine in alcohol—zi to zii. By this means the mixture is sufficiently tinted to ensure a visible line of demarkation between the impression and cast. Instead of varnishing the impression, use Elliott's "parting fluid," for sale at the depots, which will ensure perfect results, and no time need be lost, as the impression may be filled at once.

W. S. ELLIOTT, M.D.,

Goshen, N. Y.

A SINGULAR CASE.

ED. ITEMS:—Some time since a woman presented herself, declaring a tooth troubled her very much, and yet it was not a "toothache" in any sense. Naturally I hastened the patient to the chair that I might see this *lusus naturæ*, and saw the following singular sight: The tooth, as the patient had termed it, turned out to be the root of the right, lower canine, and *fully one-half of which was exposed, the alveolar process that should have covered it being entirely absorbed*. Now this condition of affairs of itself would, I presume, have given no pain, but the apex of the root had tilted forward to that extent that it was protruding into the lip, and had provoked an ulcerated or abraded tract the size of a silver half dime, and exceedingly painful. It is hardly necessary for me to add that I extracted this root.

Now, what I want to ask your numerous readers is, have they met any such cases of absorption of the alveolar process over *permanent roots*? I want to be understood, and don't want anyone to confound this case with the absorption seen in children's teeth. I have frequently seen cases similar in the deciduous teeth, and have also seen molar roots exposed from the necks upward; but I have never before seen both ends of a permanent tooth at the same time, while it was still in the jaw.

A. N. ROUSSEL,

Brooklyn, N. Y.

Mineral substances which enter into the formation of the tissues of the body must first have been assimilated by the *vegetable* cell before they can be made available for the nutrition of the animal. And when incorporated into the animal cell then it can be used as food by other animal life.—Henry S. Chase.

ITEMS.

ED. ITEMS:—Dr. Adams, of Bristol, Pa., need only follow Dr. Atkinson's directions to get perfect results. There should be enough shellac used to make a perfect coating, and it must be *perfectly dry* before soaking in water. There is no necessity for oil, for the cast will be perfect without.

I find it a very easy matter to drill cavities in porcelain teeth, by means of a piece of emery shellacked to an old bur, and driven slowly, moistening with turpentine.

I think the N. J. State Society over-anxious to obtain authority from the State to confer a dental degree. Such action on the part of the Legislature would be pernicious.

I enclose check for subscription for '84. You are very generous with your subscribers. For my part I can't understand how you can make so good a journal for so little money.

F. W. KITCHELL.

 TYING ON THE RUBBER DAM.

The following is ingenious. It is simply using very fine annealed wire instead of floss silk. It is easily twisted by small, flat-nosed pliers. The doctor sends us a model explaining his mode.

DANVILLE, Ill., June 20, 1882.

ED. ITEMS:—I see in the ITEMS OF INTEREST the question is asked: "Is there anything better than floss silk for tying on the rubber dam?" Our answer is yes, in many cases, especially where the cavity to be filled is under the gum. Take fine annealed wire, cut the twist off about one-fourth inch long, bend back over the gum to hold rubber back. Enclosed you will find model. What is wanted is a pair of pliers adapted for twisting the wire.

Respectfully, J. C. WINSLOW.

 BRADFORD, Pa., Nov. 20, 1883.

ED. ITEMS OF INTEREST:—I have watched the growth of your always good and spicy publication with much interest, and want to heartily congratulate you upon its present important and highly deserved position in our dental literature. I believe it to convey more valuable information than any other periodical published. I notice a close scrutiny in all that finds room in your pages. I have used Welch's G. & P. Alloy for three years, and like it the best of any in the market. I send subscription for the ITEMS.

Truly yours, O. B. COMFORT,
Bradford, Pa.

PLASTER OF PARIS FOR HEMORRHAGE.

ED. ITEMS:—For the last thirty or forty years I have used fibers of cotton mixen with Plaster of Paris to pack the socket with for hemorrhage, holding a ball of cotton or something between the teeth until it set. It never fails.

To Remove Rings from Fingers.—Take a suitable string, tuck under the ring, then wind close and tightly from the ring to near the end of the finger, and secure it. Now pull the end under the ring out to the side next to the hand and unwind, and the ring comes off. I have removed them from dead hands.

I am 77 years old, but can't get along without such a useful magazine as the ITEMS OF INTEREST. Inclosed find my dollar.

HIRAM COLLINS.

Another method of effecting the removal of a ring which has become constricted around a swollen finger, or in any other similar situation, consists simply in enveloping the afflicted member, after the manner of a circular bandage, in a length of flat India rubber braid, such as ladies make use of to keep their hats on the tops of their heads. This should be accurately applied—beginning, not close to the ring, but at the tips of the fingers, and leaving no intervals between the successive turns, so as to exert its elastic force gradually and gently upon the tissues underneath. When the binding is completed, the hand should be held aloft in a vertical position, and in a few minutes the swelling will be perceptibly diminished. The braid is then taken off and immediately re-applied in the same manner, when, after another five minutes, the finger, if again rapidly uncovered, will be small enough for the ring to be removed with ease.—Langon, Gaz. des Hop.

Plastic Filling.—Often in preparing the cavity I apply the rubber dam, then introduce the cement as stiffly as possible, then wait some minutes for it to harden sufficiently to scrape away the superfluous material and polish. I then take a small piece of amalgam mixed rather stiff, place it on the cement filling, take a burnisher and burnish it down. It will unite with the cement and protect it from moisture for several days. When finished it has the appearance of an amalgam filling. If you have not tried this plan, try it and report your success.

M. B. VAWTER.

And now Southern Dakota falls into rank with its Dental Association. This shows enterprise. Long may it live and flourish. Dr. C. W. Stubenroth, Watertown, President; Dr. Jas. F. Martin, Secretary. We are glad to see Dr. W. B. Steere, of Pierre. and other energetic dentists prominent in the movement.

Editorial.

SOME ITEMS OF INTEREST IN PHYSIOLOGY.

NUMBER IV.

THE MUSCLES.

The muscles are found in all parts of the body, and are the medium of its activities. They only act by contraction and relaxation. They are each used for some distinct movement or combination of movements. There are two kinds, the voluntary and the involuntary. The former are what we usually designate as the lean flesh, the latter constitutes the body of the internal organs.

The voluntary muscles are under the control of the will, but how they are thus made to widen and thicken and thus produce contraction, or, in a measure, loose this bulkiness and thus produce length, is a mystery. They always have their rise in some fixed part, as upon the surface of a bone, and their insertion, or attachment, upon some movable part or bone, never having their rise and insertion in the same bone. They thus bring the parts to which their two ends are attached nearer together, or form such modifications in themselves as to bring about essential changes of form or motion. The rise or origin of a muscle is generally fan shaped, and the insertion, or the end with which it takes hold to move, is usually a tendon. This is specially descriptive of the voluntary muscles; the shape and other peculiarities of the involuntary muscles are more diversified.

We have said the manner by which the muscles produce motion is a mystery. By way of partial explanation, we might say: A something passes along the substance we call nerve to the muscle and tells it to contract, and it contracts—to relax, and it relaxes. The propelling power of that something we call will force, and the ethereal principle employed is sometimes called electricity, while the change is thought to be produced by the accumulation of blood in the central part, or belly of the muscle, swelling it as the muscles contract. But who will call this an explanation? The secret of their

STRENGTH OR WEAKNESS

is about as mysterious as the cause of motion. The simple something which passes through the nerves can not produce strength. It is sent there to expend strength, so that every motion is exhaustive. We say the strength comes from the blood, and that the deprivation of it from a muscle, or the supply of deteriorated blood, produces weakness. But

how is this brought about? We cannot tell. By a fright or exhaustion we may become incapable of contracting a single muscle. We call it entire prostration but cannot explain it.

The muscles only act in one direction, except negatively, as after it has acted it returns to a state of rest by relaxing. That is, the muscle that extends the arm does not draw it in. They are found in pairs. For instance, there is one to extend the arm, which is called the extensor, and another to draw it in, called the flexor.

There are only two hundred bones, but more than a thousand muscles,—five hundred pairs—each designed for a definite action. Then there are combinations of muscular actions which increase their motions almost infinitely. The hand has as many muscles and combinations of muscles as there are possibility of motions. Nearly all its muscles have their rise in the forearm.

THE TENDONS

are really the diminished part of the muscles. Not diminished by a deprivation of fibrous tissue, but of the blood; for there is as much tissue in the little, tough, cordy tendon as in the bulky muscle of which it is a part. This tendon is without elasticity and power of contraction, but possesses the same amount of strength as the muscular part. This diminution of size makes it very convenient for its passage over the joints. In fact, if it were not for this change of form their cumbersome-ness would make the motions of the joints awkward, indeed, and would deprive the whole system of symmetry, facility of motion and compactness. The tendons are also useful to carry power to distant parts, as the power of some muscles of the forearm to the hand.

THE LIGAMENTS

are strong, flat, fibrous bands of connective tissue—a modification of muscles—designed to hold in close embrace the bones and tendons of the joints. At the elbow, for instance, the two ends of the ulna and humerus are thus kept in place; not so tightly as to prevent motion, and yet so closely, and in such a manner, as to allow facility of motion with such close juxtaposition as to prevent dislocation.

The believers of the theories of chemical and of bacterian causes of decay, says Dr. F. H. Rehwinkle, seem inclined to come together in their views. Dr. Watt has not been correctly understood. When he speaks of an acid condition, he means the manufacture of a strong acid in the cavity of decay, which may be very destructive. Experiments made out of the mouth could not be conducted under the same conditions as those in the mouth.

The American Dental Convention is no more.

TREATING CHILDREN'S TEETH.

One of the greatest embarrassments in the treatment of children's teeth is that the dentist is not consulted till it is too late to do the best which might have been done with earlier opportunity. But in many things of this life we have to take things as we find them, and not as we would have them. While we should do all we possibly can to educate parents to an appreciation of earlier and better attention to their children's teeth, we should show much patience, discretion and tenderness with these little ones when they are brought to us.

We shall usually find their teeth in all manner of conditions, but the right one—irregular, sensitive, decayed, broken down, aching, ulcerating, and in each of these particulars much wisdom is necessary.

In regulating children's teeth we can very easily do too much. We should bear in mind that we are only to assist nature; and sometimes a very little assistance will do a great deal of good. The mere removal of a wedged-in fang of a temporary tooth, perhaps, will be sufficient to overcome a serious malposition of a permanent tooth. Preventing a poor occlusion will often bring about wonderful changes. At times, this may be done by simply building up one or two teeth with alloy, so as to allow the free movement of certain teeth, that they may, of their own accord, take their proper place. Sometimes a little assistance may be necessary to bring this tooth out or that tooth in, but always much deference should be shown to the forces of nature, that will normally bring about what we propose to do artificially. The front under teeth, specially, may be left to regulate themselves, though considerably out of place, unless their movement is prevented by faulty occlusion. If radical changes are finally thought necessary, we should remember that almost always the peaked, narrow, small arch of the alveolus does not indicate a *jaw* too small for the normal development and symmetrical position of the teeth. The trouble generally is simply that the teeth occupy, in part or whole of their distance, the inside instead of the center or outside of the ridge of the alveolus. We often speak of a small or improperly shaped jaw, when we should speak of the alveolus process *on* the jaw.

Though children's teeth are usually more sensitive than those of adults, this sensitiveness is more easily overcome; and it pays to take great pains in this direction. Carbolic acid is the popular remedy; equal parts of this with oil of cloves is still better; sometimes the addition to these of gum camphor improves it; camphor dissolved in ether is excellent. When either of these are applied it should be instantly covered with sanderach varnish, (gum sanderach dissolved in ether). Covering the sensitive parts with thinly mixed phosphate of zinc for a while will be found decidedly advantageous. If this remains on several days or weeks, it is all the better.

In filling children's teeth it is not well to excavate all the softened dentine. Leave as much of the soft laminated dentine over the nerve as you can. The main thing is to have the margin of the cavity well cut away, and of sufficient depth to insure immunity from farther decay at these points. If the deep seated, softened dentine, is moistened with the carbolic acid and oil of cloves, and the cavity filled with phosphate of zinc, farther decay need not be apprehended, only as all these deciduous teeth are liable to take on farther decay. Alloy is better than gold for such teeth. Phosphate of zinc is sometimes better than alloy.

Do not be afraid of tackling broken down teeth. If only sufficient undercut can be had, you may have success. Of course, care must be taken not to uncover the pulp, if it is there; for the pulp of a child's teeth is much larger than in the teeth of adults.

Almost invariably, it is the toothache that first brings the child to you, and it is to have "that tooth out." If you think it at all advisable to save it, let your first act be to stop the toothache—and the salvation of the tooth should *generally* be your advice. "Heaven's cordial," the recipe of which accompanies the phosphate of zinc, will usually accomplish this very quickly. Of course, if, by any accident, some substance has been crowded upon the nerve, this must be removed. After the heaven's cordial has measurably removed the pain, apply equal parts oil of cloves and creasote on cotton, and then, almost immediately, remove the cotton and drop on gutta-percha varnish, and cover this with thin phosphate of zinc. At a subsequent sitting this is to be removed, and the tooth prepared for permanent filling. But in this preparation do not disturb more of the softened dentine than possible. See that the margins of the enamel are good and strong, and trust to the hardening of the dentine being a better protector to the nerve than anything artificial. If there is no such protection, the gutta-percha solution is the next best. Now fill again with oxyphosphate, and, cutting away a portion of it, cover with alloy. Sometimes the whole filling may be of the alloy.

Even the permanent teeth in children are often better filled with oxyphosphate or gutta-percha than gold. The teeth are softer, more vascular, and more subject to foreign influences. These fillings, even in the front teeth, will not generally be a dis-sight. If such teeth have to be refilled two or three times before age has matured them, it is better than to have filled them in the first place with gold; for often the margins of the cavities in the latter case will take on decay, or the dentine so soften as to give sensitiveness, and sometimes more serious trouble. The idea of a filling which has to be removed, betimes, not being the best, has many exceptions. It is seldom you see decay around the margin of a gutta-percha or phosphate filling, and when they are renewed the tooth substance is found more firm than when first filled—especially is this so in the case of the phosphate. And much that we would do with children's teeth we would do with all.

FOR DYSPEPSIA.

We think most will agree with us that, almost invariably, dyspepsia is our own fault.

1st. *Most of us over-eat.* There is no question about it. It is not the greatest eaters who digest the most food ; and all taken into the stomach which is not digested is an injury. All food must, in a sense, become soured before it can be digested, and all have "acid stomachs;" but, during healthy digestion, this process of change in the character of the food by the acid of the stomach is nascent ; that is, fresh, active, formative. The food which remains there after this active operation, is in *such* a state of acidity as to produce what is generally called dyspepsia.

2d. *We eat indigestible food.* We know it, and yet we go on eating it. We know we are injuring ourselves, and yet we persist. One cannot dictate food for another. Each must know for himself what is proper. But this is no excuse for eating what we know *we* should not eat, no matter how well it may agree with some one else. Some can easily digest what others cannot tolerate.

3rd. *Most of us eat food which we know is too rich and concentrated.* We prefer to tickle the palate than to suit the stomach. It is not conviction we need on this matter as much as censure. And though this censure is continually self-imposed, we go on sinning,—willfully, foolishly—reaping the evil consequences.

4th. *Our principal meal must be at the proper time.* Some eat full meals whenever they come to the table, and a few can do so with impunity, but most can not sleep well, nor keep a healthy stomach, with a full meal in the evening, especially if they make it their principal meal. "But," says one, "I can not choose. I go to business at eight and remain till five, with only a lunch, whenever I can catch it, during this time." *I have thought* so, but at the same time I have known better. There is no necessity in the case. We can not afford to have any excuse for breaking the laws of health. If eating our dinner at supper time is injurious, we must reverse the habit. But this delicate little lunch is not always so insignificant. I have heard business men deplore the necessity of dinner at supper time on the above ground who, at twelve or one o'clock ate at the restaurant their roast beef or turkey, and their various side dishes, with an after desert of pie, pudding or cake, till it seemed a wonder where they put it all. They are pretty ones to come home with their long faces, half starving for their "principal meal !"

5th. *Frequently we do not eat food consistent with our occupation.* The man who swings a sledge all day can eat what a dentist can not. He who daily walks his three miles and chops his cord of wood can eat what a man of sedentary habits can not. And we ourselves can digest

in camp, while rustivating, what we cannot while at our professional work.

6th. *If we have weak or delicate digestion, we must favor it.* How, and by what kinds and quantity of food, etc., we can generally tell better than any one else—better than a physician. The main thing is to say, *I will do it.*

7th. *Associate habits must be consistent.* It is of no use to enumerate. They are self-suggesting; and, if we have not gone too far in stifling conscience, and judgment and common sense, they will assert themselves. There are exceptions, but most of us know what is right; and, as surely as law and health and true happiness go hand in hand, so surely we shall have good digestion if we live in harmony with its demands.

RULES OF BUSINESS.

My mother was an extensive milliner, and became quite popular. One day, as I was approaching manhood, she advised me in substance as follows:

My son, it is for you to say whether, as a business man, you will be a success or a failure. The majority of men in all businesses are failures. But I think if you will carry out the following rules you may be successful:

1st. Be thoroughly qualified for your business. For success do not trust chance, outward show or assumption. Merit alone will give permanent prosperity.

2d. Go to the people, and not expect the people to come to you. An out of the way place of business is dear at any price. If you are well qualified for what you do, it will pay you to have a good location though you have to pay well for it. But even there you cannot afford to fold your hands and expect the people to find you out. By all legitimate means let them see who you are and what you can do. The charlatan advertises and shows himself a charlatan; and there are ways for a business man to advertise and show himself to be a business man. As a professional man avoid advertising as you would avoid quackery—that is, advertising in the ordinary sense of that term. Yet, advertise. Make it an essential part of your business. There are ways of advertising and yet not advertising; being prominently before the community, and yet give no offence but attract by what you say. You may do great good by imparting solid truths and timely suggestions, and showing an interest in their welfare from your professional standpoint. If this is done with great caution, modesty and good judgment, you will obtain their hearty thanks and all the support you deserve.

3d. Make your place of business attractive. Not gaudy, or even showy, but yet rich and homelike—well appointed, and yet putting

your customers or patients at their ease by its inviting aspect. Do not say you cannot afford it. You cannot, and should not if you could, unless your qualifications, culture and dignity correspond; but if you really belong there, and will take the proper course to maintain yourself in it, Mr. Public Opinion will pay the bills and leave you a good profit.

4th. Receive all with gentlemanly courtesy and frankness. Avoid the two extremes of great familiarity and unapproachable reserve. Let your whole demeanor show that you are the master of your situation, and that at the same time you are eminently a fellow with those you serve—sympathizing with their troubles, interested in their wants and determined to please them in your services. Study the difference between pity and sympathy, pedantry and intelligence, foolishness and affability, austerity and dignity.

5th. Maintain your moral integrity. Be conservative without yielding principle; seek to please without compromising the right; win by your graces without losing your self-respect, and be in the community a positive power in every good cause.

6th. Work for the future. Slighted work, erroneous advice and yielding to popular prejudices may give good financial showing for the day, but their effect upon the future will be damaging indeed. Better be reckoned a slow workman than a poor one; better maintain an unpopular course than a wrong one; better be a little ahead of the masses and receive their jeers than to stultify conscience and receive applause. By and by they will award you the greater honors.

7th. Remember you will never be too old to study, and to improve in all the elements of wisdom and skill. The world is moving forward, and if you would keep up with it, you must be able to do tomorrow what you cannot do to-day; and know more both concerning your specific calling and of the world in general.

Unconsciously Becoming Famous.—Some six months since Mrs. M. W. J. wrote a short article for the *Southern Dental Journal* to mothers, concerning the teeth of their children. It contained so much good sense that it re-appeared in the *ITEMS* and one of the English journals, and we believe other journals published extracts or made favorable mention of it. This stimulated Mrs. M. W. J. to appear again and then again in the same journal. These our readers have also read, and we have still another in this issue. The editor of the above journal has received so many evidences of their popularity and intrinsic worth that he has requested this lady to write a series of articles of the same nature to be bound in a small volume when complete. The first of the series also appears in this issue of the *ITEMS*. We are confident the profession will appreciate them, and that their patients would be pleased and instructed by them.

METHOD IN THINKING AND ACTING AS ESSENTIAL TO SKILL IN MANIPULATION.

Method is science—individual thoughts and acts so arranged and systematized as to bring them from generalities, looseness and chaos into symmetry, harmony and logical juxtaposition.

The man we may look upon as an ignoramus, and the acknowledged scientist, may have equal knowledge on a subject, the difference being mainly that the one resembles the old floodwood militia, and the other the well organized battalion. The merits of both may be strong, but in one the massing is without system and intelligence; in the other, every individual is so martialled and handled that to the strength of each man is added the skill of position and the power of combination. Every step is firm, every manœuvre definite, and every combination well chosen. An army of such soldiers look less to the odds against them than to the commands of the general, and their success is due more to the might of method than to the strength of numbers. So with method in thinking and acting. Every thought has its proper place, and every cluster of thoughts is well arranged. Knowledge is so systematized as to be definitely serviceable on call, each minutia is ready as wanted. It is astonishing to see with what precision they wheel into line, and though they may not be numerous, and individually not so strong as could be desired, yet as arranged, and used, and concentrated, what a power they are.

Thus we see, to have good thoughts is not enough; to know how to handle them is quite as important. To be familiar with what will accomplish a certain end is knowledge; to be able so to circumvest that purpose as to make it an accomplished fact, is wisdom.

Knowledge is like the clay taken from the bed. For it to represent wisdom it must be purified, kneaded and tempered, moulded, cured and polished, and then subjected to the tremendous heat of the furnace. The raw material is cheap, crude and shapeless, but the finished vessel is expensive, refined and beautiful. The original material was without cohesion, unfit for any practical use, but by patient and skilful handling, and the final ordeal of fire, there is compactness, cohesion and strength, which has admirably fitted it for some special purpose.

In our ranks are dentists of limited knowledge, few ideas and poor *general* ability, and who, in everything outside their immediate business, are awkward, ignorant and thick-headed, but, by using well their "mother wit," carefully husbanding what they do know and concentrating all their powers upon a limited sphere, they surprise us with their good results. There are others, talented, popular, winning, "successful," with every advantage of instruction, association and position, and yet they are not skilful in the essentials of good work. Their heads are crammed full of knowledge, but it is heterogeneously

packed away ; they can talk glibly in glittering generalities of what should be done in this or that case, and surprise us both by their loquacity and their fund of information, but they are more learned than skilful, better teachers than practitioners, and, in their offices, more dexterous in drawing patronage than in preserving teeth : all this because they have not learned the secret of subordinating everything about them and within them to their *chief work*, and in that work having explicit convictions, clear conceptions, and precise knowledge, all so essential to matured judgment in manipulation, unerring skill as a specialist, and expertness in the minutia of practice.

The composition of gold solder must depend on the alloy of the plate to be soldered. A good solder for coin is, 2 dwt. gold, 9 grs. copper, 3 grs. silver, and 1 grain zinc ; with care, gold of 18 karats can be soldered with this, and it is better than a heavier grade. A softer solder may be made of gold 2 dwt., copper 8 grs., silver 5 grs. and zinc 5 grs.

A good silver solder is 1 part zinc, 3 parts copper and 16 parts silver. One flowing much easier may be made of 5 zinc, 8 copper and 48 silver.

It is singular that copper, which requires a much greater heat to melt than silver, will, when added to the silver, cause both to melt at a lower temperature than either will melt when alone.

In cutting and treating the dentine of the teeth, we should be much more delicate and considerate in our manipulations if we bore in mind the fact that this dentine is only calcified pulp. We often call the pulp the nerve of the tooth, but though in greater minuteness and in less activity, the blood vessels and nerves ramifying the pulp are still in the dentine, and may be irritated and inflamed, and made to transmit intense pain. Caries itself is but a species of what in the pulp we should call putrefaction. We should also have much more patience, carefulness and sympathy, for those patients are hyper-sensitive, if we remembered that generally the difference between these and the more obtuse is that they are more nearly allied to the uncalcified portion of the tooth called the pulp.

Bone and tooth material is principally found in the gluten of food. Starch contains but a small proportion of the phosphates. •

Gold beaters' skin makes fine "court plaster."

Camphorized ether is a good obtunder for sensitive teeth.

Liquid Glue.—Dissolve 1 pound best pulverized glue in water and add gradually 1 ounce of nitric acid and heat for a short time.

UNCLE JOSIAH COMING TO LIFE.

We have received the following from Dr. Amiss. What does it mean?

BOSTON, Oct. 30th, 1883.

DR. J. M. AMISS, Luray, Va.:

Dear Sir—We beg to refer you to our letter of Nov. 29th, 1880, to which we have received no reply, nor has a dollar been paid. The affairs of the company have got to be settled up at once. Unless fifty dollars is forwarded without delay, we shall be obliged to place your case in the hands of our attorneys, and you will have costs to pay. The above terms will also be withdrawn. Trusting no further action will become necessary, we remain,

Yours truly,
GOODYEAR DENTAL VULCANITE CO.,

pr. Geo. P. Wheeler.

This sounds, really, like the resurrection of the Josiah Bacon & Co. Shall they be allowed to collect all their old claims after all this delay?

Gutta-percha fillings, in many cases, are very useful. But to attain the best results great care must be used in its manipulation. Overheating is sure to spoil it. The best way to soften it is on a plate over hot water. In finishing off the surface, many fillings are ruined by too hot a burnisher. Then again there are some preparations of gutta-percha on the market too much loaded with earthy materials.

A good gutta-percha, properly manipulated makes a pretty durable filling, and for some situations is specially serviceable. For the cervical wall of cavities, down, deep under the gum, or even contiguous to it, we have found it well adapted. Whether the remainder of the filling is alloy or gold, this layer of gutta-percha will often better protect this part of the tooth than metal.

We used to use it as a temporary filling for sensitive teeth, or for those requiring after treatment and for children's teeth, and it is still used by many good operators for these purposes. In these cases we now prefer oxyphosphate.

To govern our patients, we must be able first to govern ourselves.

It is well that the most of us are capable of giving good advice. It comes with better grace, however, when we are ourselves a living example of the advice we give.

We do not expect a crop of corn without much cultivation—simply throwing the seed on the ground is not sufficient. So it is not enough that we put good thoughts in our minds. They must be cultivated with great care to bring forth ripe, luscious fruit.

Constancy in labor will conquer all difficulties.

Miscellaneous.

ITEMS IN CHEMISTRY.

BY H. E. ROSCOE.

PHOSPHORUS

is an element which does not occur in the free state in nature, but is contained in the bones of animals in combination with oxygen, and the metal calcium forming calcium phosphate. When a bone is burnt, a white porous mass is left called bone-ash, and from this phosphorus can be prepared.

Phosphorus, like carbon, exists in two forms: one is known as yellow or common phosphorus; the other as red phosphorus. These differ much in their properties.

Take a small iron tray, placed on a tripod, and carefully cut off a small piece of yellow phosphorus as large as a quarter of a pea; this must be done under water, as the phosphorus is a very inflammable and dangerous substance, because it takes fire of itself in the air, and produces serious burns if it takes fire whilst in the fingers. Then quickly dry the bit of phosphorus on a cloth or blotting-paper, and put the dried bit with a pair of tongs or a knife-blade on to the iron tray. Next take a bit of red phosphorus (or the powder) of the same size, and put it also on the iron tray. Now put the flame of a lamp under the tray; quickly the yellow phosphorus will take fire and burn with a bright flame, and give off dense white fumes. The red phosphorus, however, does not take fire, and we have to continue the heat for some time before this red substance catches fire: this it does, however, at length, and then burns exactly like the yellow phosphorus. Thus we see that yellow phosphorus is very inflammable, and must be kept under water to prevent it taking fire with the oxygen of the air, whilst the red variety does not burn at all easily, and can therefore be kept in the air.

Yellow phosphorus takes fire by rubbing it. Take another very small bit, and wrap it in a piece of blotting-paper; then rub it with your boot on the floor, or with a hammer on a piece of wood. You will see that the rubbing causes the phosphorus to take fire and burn. This is the reason matches light when they are rubbed. The brown or red tip of the match contains phosphorus; when you rub or strike the match on a rough surface, the varnish which covers the phosphorus

paste is scratched off, and the phosphorus takes fire and the match burns.

Lately safety lucifer matches have been made, which light only on the box. How is this? A little thought and examination will soon teach us. Take one of these safety matches, and try to light it on the sandpaper outside a common match-box, it will not light; but rub it on the brown or reddish brown paper on the outside of the safety match-box, and it takes fire at once. The explanation is easy: the tip of the safety match contains no phosphorus, and therefore it cannot light by rubbing on any rough surface, but only some substance which will easily cause phosphorus to burn; the paper on the box is covered with some powdered red (or non-inflammable) phosphorus; when you strike the safety match on this red paper, a little of the red phosphorus sticks to the end, and then takes fire with the mixture on the tip.

SILICON

is an element which (like phosphorus) we do not meet with in the free state in nature, although it is contained in enormous quantities in combination with oxygen. Silicon oxide, or Silica, is known as quartz or rock crystal, and it is found in almost all rocks. Sand, sandstone, and flint are also more or less pure silica. Silica forms, with metals, compounds called silicates. Clay is a silicate, so therefore are bricks, pottery and china, which are made from clay. Glass is also a silicate; it is made by heating together in a hot fire or furnace a mixture of white sand (silica), lime, and soda, or of sand, oxide of lead, and potash.

The first mixture forms what we know as plate-glass or window-glass; the second produces flint-glass. Silicon itself is a black crystalline substance, and is obtained by taking away the oxygen from silica.

All the rocks and stones of which solid earth is made, contain either silicon or some metallic elements, or both combined with oxygen. So you see that the earth is made up of burnt or oxidized substances.

IRON.

One most useful ore of iron is red iron oxide, called hæmatite iron ore. By heating this with charcoal the oxygen is got rid of, and the metal iron remains, and this can be hammered into bar-iron. This is called wrought iron, because it can be hammered and wrought, or made, when it is red-hot, into anything which is wanted. There is another kind of iron also very useful; this is called cast-iron, because it can be melted, and poured when melted into moulds, and castings. Cast-iron is made from iron ore and coal, and lime-stone, by putting these into large high furnaces, called blast furnaces, because the air is blown in to burn the coal and melt the iron by a powerful blast.

Cast-iron cannot be hammered when hot, like wrought iron, into bars, or rolled into plates ; it is brittle, or breaks, like glass, into pieces under the hammer. Cast-iron is not pure iron, but contains carbon, which it gets from the coal ; we can burn the carbon away (by a process called puddling), and we thus can get wrought-iron from cast-iron. A third kind of iron is called steel ; this also contains a little carbon, and can be made either from wrought-iron or from cast-iron.

If you pour a little dilute sulphuric acid on a few iron filings in a test-tube, gas will at first be slowly given off ; if the test-tube be warmed, the gas will escape more quickly, and it may be lighted at the mouth of the glass. This gas is hydrogen ; the iron dissolves in the acid, forming a salt, called sulphate of iron or green vitriol, and the hydrogen of the sulphuric acid is given off. If you fill the test-tube with water, and then filter the liquor through a paper filter, you will get a nearly colorless solution ; and if this be evaporated or boiled down crystals of green vitriol will be formed on cooling.

Saved by his Teeth.—Artificial teeth often after the greatest service to the wearer ; but the fact of a set of teeth having been the means of saving life, is not without interest. Captain —— was induced to go to Borneo in search of diamonds, and fell into the hands of the savage natives. He was imprisoned and doomed by the chiefs to be killed. Having been led to the place of execution, Captain ——, who was able to speak many languages, made the chiefs understand that if they killed him their land would not prosper, for he had powers and connections with the spirits above ; and in proof of this he would show that he could take out his teeth. He then moved about his artificial teeth and protruded them from his mouth by means of his tongue, to the utter amazement and alarm of the people. A consultation of chiefs was held and they concluded that he was of another world beyond the clouds, and they prostrated themselves before him. He being free, quietly made his way to the coast and managed to be picked up by a boat, eventually reaching civilized parts.—*Dental Record, London.*

Bitter and nauseous saline medicines may be administered without inconvenience if ordered to be taken as follows :—A mouthful or two of *iced water* should be taken immediately before the dose, or after, and the dose itself in a wine-glassful of iced water. The iced water seems to blunt the sense of taste.

Bromide of sodium may in the same way be given in half-grain doses, dissolved in plenty of water. Few remedies are better in cases of children feverish and suffering from nervous exhaustion consequent on teething.

A *Correspondent* writing to the "British Medical Journal" states, that a death from chloroform-poisoning occurred recently at Whitehaven. An inquest was held on the body of Robert Falcon, aged 45, who attended at the surgery of Mr. Muriel, a surgeon of that town, with the intent of having a tumor removed from his lip. While Mr. Muriel was administering chloroform his patient became livid and, in spite of restoratives, died immediately. "The medical men who made a *post mortem* examination stated that death had resulted through chloroform, which had been properly administered, but that it had acted upon the nerve-system causing stoppage of the heart's action." Mr. Falcon had taken the anæsthetic with impunity upon previous occasions.

Deaths are multiplied, and yet the laity, as well as the profession at large, refuse to read aright the lesson such mortality should bring home. Mr. Muriel doubtless possessed all the knowledge and skill which falls to the lot of busy practitioners; but neither he nor any man in general practice should undertake anæsthetizing without training and constant practice. The mere rules of thumb now in vogue, and which are repeated *ad nauseum* in manuals upon the subject, do not, and cannot, guide a man in the arduous and responsible duties of an anæsthetist. If any man should be an expert and a specialist, the administrator of anæsthetics should be. A mere perfunctory examination of the heart by the stethoscope is not enough—a thorough knowledge, both of the medical and surgical aspects of the case, is essential.—*British Jour. Den. Sc.*

Aristocratic Dentistry.—Mrs. Bancroft, the actress, visited recently one of the most celebrated dentists in London, who seldom handles anything but aristocratic jaws, to have her teeth examined and operated on. Knowing the weakness of the expert, she asked what his charge was, but he refused to say until he had completed what was but an inspection and some cleaning. This done, he said his charge was \$250. The artiste protested, and offered \$100, which she said was all the money she had with her. She added that she had brought so much because she was told that the charge would be exorbitant, and provided herself with a sum expected to meet the highest figure. She declares that the fashionable dentist took the \$100, and, clapping his back to the door, would not allow her to leave until she had signed a note for the rest. The case is to be heard in court.—*New York Sun.*

Watch the effect of the brush on the teeth of your patients. While some do not use the brush enough, others use it too much, and produce a groove across them that is very injurious. Stiff brushes and harsh usage of them is as bad as their neglect.